As referential example the composition in the case of glycidyl methacrylate alone was prepared in the same manner as in the case of No. 1–No. 7. Using various said bonding compositions, the bonding strength was measured by following the same procedure as that of Example 1. Results were tabulated in Table 5.

TABLE 5

No.	Component B	(No. in parentheses indicates compound No. illustrated in the text)	Solution a DEPT (part)	Solution b BPO (part)	Solution b BHT (part)	Bonding strength to enamel (kg/cm^2)
1	γ-Methacryloxypropyltri methoxysilane	(43)	3	3	0.2	100–105
2	N-β-aminoethyl-γ-aminopropyl tri-methoxysilane	(47)	5	5	0.3	80–85
3	β-(3,4-Epoxycyclohexyl)ethyl tri-methoxysilane	(50)	5	5	0.3	80–85
4	γ-Glycidoxypropyltri-methoxysilane	(48)	5	5	0.3	85–90
5	Vinyltriethoxysilane	(40)	4	4	0.2	95–100
6	γ-Aminopropyltriethoxysilane	(45)	5	5	0.3	85–90
7	Vinyltris-(β-methoxyethoxy) silane	(42)	4	4	0.2	95–100
Referential Example	—		4	4	0.2	60–70

It follows from Table 5 that if in improving the bonding to the tooth of the Bis-GMA type composite resin, there are used, as the bonding agent, various compositions consisting predominantly of glycidyl methacrylate (80 parts) corresponding to the component A of the composition of the present invention and various silane compounds (20 parts) corresponding to the component B of the composition of the present invention mentioned in Table 5, in either case, it is much more effective as compared to the case of using no silane compounds.

It is silane compounds represented by the formulas 4-A and 4-B in the text that are particularly advantageously used as the silane compound corresponding to the component B of the bonding composition of the present invention.

EXAMPLE 6

Various bonding compositions used in No. 9 and No. 11 of Example 1, No. 5 of Example 2, No. 5 of Example 4 and No. 1 of Example 5 were used as the bonding agent on the occasion of filling the tooth with following novel composite resins for which the instant inventors enjoy the same priority claim date as in the present application. The method for the preparation of novel composite resin and the method for its filling are identical with the case for the Bis-GMA type composite resin of Example 1. The method for the measurement of its bonding strength to the tooth is identical with that used in Example 1.

Listed together are those results obtained in like manner when using the bonding agent "ADANTIC", a product of J & J company, and when using no bonding agent at all. Results were tabulated in Table 6.

Method for the preparation of novel composite resin

Component	Paste a (parts)	Paste b (parts)
Tetramethylolmethane triacrylate	55	55
Tetramethoylolmethane tetracrylate	45	45
Powdered silicon nitride (Si_3N_4)	420	420
DEPT	2.0	—
BPO	—	2.5
BHT	—	0.15

TABLE 6

No.	Bonding composition	Bonding strength to enamel (kg/cm^2)
1	same as used in No. 9 of Example 1	100–105
2	same as used in No. 11 of Example 1	110–120
3	same as used in No. 5 of Example 2	105–110
4	same as used in No. 5 of Example 4	105–110
5	same as used in No. 1 of Example 5	110–120
6	Bonding agent "ADAPTIC" made by J & J company	60–70
Referential Example	not used	60–70

The above results show that the bonding compositions of the present invention are very effective when used as the bonding agent in filling teeth with the said novel composite resin discovered by the instant inventors and show a higher bonding strength than in the case of using in combination with the Bis-GMA type composite resin as noted from comparisons with No. 9 and No. 1 of Example 1, No. 5 of Example 2, No. 5 of Example 4 or No. 1 of Example 5, etc.

EXAMPLE 7

The bonding composition used in No. 11 of Example 1 was coated on the bovine enamel and then it was filled and bonded with the Bis-GMA type composite resin and novel composite resin used in Example 1 and Example 6 and immersed in water at 37° C. for a given time to determine the bonding strength. Investigations were made on the change of the bonding strength with the lapse of time. Results were tabulated in Table 7.